

Serial No. 10/539,751

Docket No. HI-0190

Amdt. dated April 21, 2009

Reply to Office Action of January 22, 2009

REMARKS/ARGUMENTS

Claims 1, 3, 6, 8-10, 12, 14, 20-25, 27-28, and 30-36 are pending. By this Amendment, claims 1, 3, 6, 8-10, 12, 20-21, 23, 25, and 30 are amended, claims 2, 4-5, 11, 13, 15-19, 26, 29 are canceled without prejudice or disclaimer, and claims 33-36 are added. No new matter is added. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and following remarks is respectfully requested.

The Office Action rejected claims 1-4, 6-8, 20-24, and 27-28 under 35 U.S.C. §102(b) as being anticipated by Tanji, U.S. Patent Publication No. 2001/0013269. Claims 2, 4, and 7 have been canceled. The rejection is respectfully traversed in so far as it applied to the pending claims.

Independent claim 1 recites a dual journaling storing method for storing data in a storage medium, characterized in that data are stored from start and end locations of the storage medium toward a central location, wherein when two types of the data whose kind and characteristics are different are stored in the storage medium, the two types of data are separately stored as a front journaling and a rear journaling, respectively, wherein when a head of the front journaling and a head of the rear journaling meet each other at a first location, a central location is set at the first location and the head of the front journaling is returned to the start location and the head of the rear journaling is returned to the end location, wherein the central location moves toward the other party's journaling if the head of the front journaling or the head of the

Amdt. dated April 21, 2009Reply to Office Action of January 22, 2009

rear journaling arrives again at the central location and the other head is not located at the central location, and wherein the head is indicative of a location for storing data. Independent claim 6 recites a method for storing data in a storage medium, comprising: dividing the data into a first data and a second data; and storing one of the first data and the second data from a start location of the storage medium, and storing the other from an end location of the storage medium toward the start location, wherein when a head of the first data and a head of the second data are stored and meet each other at a first location, a central location is set at the first location, and the first and the second data are stored from the start location and the end location, respectively, and wherein the central location is variably formed based on at least one of a respective amount of data to be stored or a size of a respective storage space in which the data is to be stored. Independent claim 20 recites a dual journaling storing method for storing data in a memory sectioned into multiple partitions, data being independently read, written, or erased according to the respective partitions, characterized in that the data is stored from start and end locations of storage spaces of the respective partitions toward a central location, wherein a garbage collection is performed at the front journaling and the rear journaling independently when a free space is insufficient. It is respectfully submitted that Tanji does not disclose or suggest all of such features, or the respective claimed combinations of independent claims 1, 6, and 20.

Accordingly, the rejection of independent claims 1, 6, and 20 over Tanji should be withdrawn. Dependent claims 3, 8, 21-24, and 27-28, as well as added claims 33-34, are

allowable over Tanji at least for the reasons discussed above with respect to independent claims 1, 6, and 20, from which they respectively depend, as well as for their added features.

The Office Action rejected claims 5, 25, and 30-32 under 35 U.S.C. §103(a) as being unpatentable over Rodríguez et al. (hereinafter "Rodríguez"), U.S. Patent No. 6,725,241, in view of Tanji. Claim 5 has been canceled. The rejection is respectfully traversed in so far as it applied to the pending claims.

Independent claim 25 recites a dual journaling storing method for storing data in a memory sectioned into multiple partitions in a case that the data are inserted into the respective partitions of a flash memory, wherein the data are independently read, written, or erased according to the respective partitions, the dual journaling storing method comprising: when the insertion of the data into the respective partitions is requested, a storage medium performing a garbage collection if a storage space is insufficient, thereby moving the data and carrying out an erase operation; and checking whether there is a sufficient space in the storage medium after the data storage is completed, thereby securing a storage space for a next inserted data, wherein when the erase operation is carried out, the free storage space is secured and a valid data of the data moves to a head location of the respective partitions, wherein when data whose characteristics are different are stored in each partition of the memory, the data are separately stored as a front journaling and a rear journaling, wherein when a head of the front journaling and a head of the rear journaling meet each other at a first location, a central location is set at the first location and the head of the front journaling is returned to the start location and the head of

the rear journaling is returned to the end location, wherein the central location moves toward the other party's journaling if the head of the front journaling or the head of the rear journaling arrives again at the central location and the other head is not located at the central location, and wherein the head is indicative of a location for storing data. It is respectfully submitted that Rodriguez and Tanji, taken alone or in combination, do not disclose or suggest all of such features, or the claimed combination of independent 25.

Accordingly, the rejection of independent claim 25 over Rodriguez should be withdrawn. Dependent claims 30-32 are allowable over Rodriguez and Tanji at least for the reasons discussed above with respect to independent claim 25, from which they depend, as well as for their added features.

The Office Action rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Ban, U.S. Patent No 5,404,485, in view of Tanji. The rejection is respectfully traversed.

Independent claim 9 recites a flash memory device, comprising: a processor that generates a read/write command for reading/writing data from/to a specific address; a flash memory that provides a data storage space; and a memory controller that controls the data to be stored in the flash memory from start and end locations of the data storage space toward a central location, wherein when data whose characteristics are different are stored in the flash memory, the data are separately stored as a front journaling and a rear journaling, wherein when a head of the front journaling and a head of the rear journaling meet each other at a first location, a central location is set at the first location and the head of the front journaling is

returned to the start location and the head of the rear journaling is returned to the end location, wherein the central location moves towards the other party's journaling if the head of the front journaling or the head of the rear journaling arrives again at the central location and the other head is not located at the central location, and wherein the head is indicative of a location for storing data. It is respectfully submitted that Ban and Tanji, taken alone or in combination, fail to disclose or suggest all of such features, or the claimed combination of independent claim 9.

Accordingly, the rejection of independent claim 9 over Ban and Tanji should be withdrawn. Added claims 35-36 are allowable over Ban and Tanji at least for the reasons discussed above with respect to independent claim 9, from which they depend, as well as for their added features.

The Office Action rejected claims 10-19, 26, and 29 under 35 U.S.C. §103(a) as being unpatentable over Alexis et al. (hereinafter "Alexis"), U.S. Patent No 6,260,103, in view of Tanji. Claims 11, 13, 15-19, 26, and 29 have been canceled. The rejection is respectfully traversed in so far as it applied to the pending claims.

Independent claim 10 recites a multiple-partitioned flash memory device, comprising: a memory; a plurality of partitions provided by a multiple partition of the memory, in which data being stored are independently read, written, or erased; a charge pump that provides a plurality of voltage levels necessary to read, write, and erase the data; a plurality of first sense amplifiers configured for a read operation, the read operation being simultaneously executable for the respective partitions; and a plurality of second sense amplifiers including at least one sense

amplifier configured for erase and write operations, the erase and write operations being simultaneously executable for the respective partitions, wherein the data are stored in the respective partitions from start and end locations of storage spaces of the respective partitions toward respective central locations, wherein the central locations are variably formed based on at least one of a respective amount of the data to be stored or a size of a respective storage space in which the data is to be stored in the respective partitions, wherein when data whose characteristics are different are stored in each partition of the memory, the data are separately stored as a front journaling and a rear journaling, wherein when a head of the front journaling and a head of the rear journaling meet each other at a first location, a central location is set at the first location and the head of the front journaling is returned to the start location and the head of the rear journaling is returned to the end location, wherein the central location moves toward the other party's journaling if the head of the front journaling or the head of the rear journaling arrives again at the central location and the other head is not located at the central location, and wherein the head is indicative of a location for storing data. It is respectfully submitted that Alexis and Tanji, taken alone or in combination, fail to disclose or suggest all of such features, or the claimed combination of independent claim 10.

Accordingly, the rejection of independent claim 10 over Alexis and Tanji should be withdrawn. Dependent claims 11-14 are allowable over Alexis and Tanji at least for the reasons discussed above with respect to independent claim 10, from which they depend, as well as for their added features.

Serial No. 10/539,751
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Docket No. HI-0190

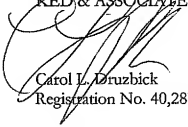
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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